

USSR

UDC 621.362.2(088.8)

BEYLIN, A. Yu., DUDKIN, L. D., ZYKOVA, N. P., KOLOMEYETS, N. V. MAZUR, V. A.,  
TARTAKOVSKIY, D. L., KHANIN, M. A.

"A Thermocouple"

USSR Author's Certificate No 227428, Filed 6 Jul 67, Published 20 Jan 70 (from  
RZh-Electrotekhnika i energetika, No 8, Aug 70, Abstract No 8A127 P)

Translation: The proposed thermocouple contains a P-branch of germanium telluride, a commutation bus of iron, and a commutation substrate. A mechanical mixture of tungsten and tin telluride, or tungsten and lead telluride is used as the commutation substrate. This is to improve mechanical strength and reduce power lost in commutation.

1/1

USSR

UDC: 62-505

TARTAKOVSKIY, G. P., REPIN, V. G.

"Adaptation Based on Knowledge of Losses in Preceding Steps in Multistep, Decision-Making Processes"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 11, Nov 72, pp 2304-2312

**Abstract:** A principle is formulated and an algorithm is found for developing optimum, multistep, decision-making processes based on minimizing the instantaneous a posteriori risk when the losses in past steps are known and the a priori indeterminacy has been parametrically assigned. The solution of the problem is applied to the case of verification of hypotheses. An example of multistep pattern recognition is given.

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USSR

'UDC: 62-505

REPIN, V. G., TARTAKOVSKIY, G. P.

"Optimum, Multistep, Hypothesis-Checking Processes Based on Knowledge of Losses in Previous Steps in the Case of Complete a Priori Indeterminacy"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 11, Nov 72, pp 2450-2452

**Abstract:** The information on current losses which is obtained in a decision-making process gives a basis for constructing optimum algorithms with a certain amount of a priori indeterminacy. The authors take the extreme case of complete lack of a priori data on the form of the loss function, including the dependence of this function on situations in connection with which the decisions are made, the statistics of these situations, and even their essence, as well as statistics of observed data. The problem of minimizing the sum of the losses for a given number of steps is considered. The procedure is applicable to the verification of statistical hypotheses.

1/1

USSR

UDC 621.391.1

REPIN, V. G., TARTAKOVSKIY, G. P.

"Effectiveness of Algorithm for Differentiation of Signals with Unknown Parameters"

Moscow, Problemy Peredachi Informatsii, Vol 7, No 2, 1971, pp 47-57.

**Abstract:** The probabilities of correct decisions are found for an algorithm for differentiation of signals with unknown parameters, observed in a mixture with Gaussian noise. A number of characteristic examples are analyzed. The loss of effectiveness resulting from lack of knowledge of parameters is evaluated. The results are generalized to cover the case of correlated noise.

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USSR

BROUDE, V. L., TARTAKOVSKIY, I. I., TIMOFEEV, V. B., Institute of Solid State Physics, Academy of Sciences of the USSR, Chernogolovka

"Kinetics of Luminescence of Free and Bound Excitons in CdS Crystals"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 12, Dec 72, pp 3531-3539

**Abstract:** An investigation is made of the variation, with temperature of integral luminescence of cadmium sulfide crystals and of the bands due to annihilation of free and bound excitons. The probabilities of binding of electron-hole pairs into excitons, and of binding excitons into exciton-impurity complexes are determined on the basis of analysis of the resultant relations. Temperature intervals are determined within which quasi equilibrium can be assumed between different states of excitation of the crystal. (Quasi equilibrium takes place at temperatures above 80°K for electron-hole pairs and excitons, and above 50°K for excitons and exciton-impurity complexes on a neutral acceptor and on a neutral donor). It is shown that an increase in the intensity of exciton luminescence (A-band) in the interval of 40-130°K can be attributed in almost equal measure to an increase in the total number of excitons and to an increase in the effective quantum yield. It is shown that about 90% of the pumping is lost due to capture of free carriers at approximately 130°K and that the percentage falls to approximately 1.1.5% at low temperatures.

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USSR

BROUDE, V. L., TARTAKOVSKIY, I. I., TIMOFEYEV, V. B., Institute of Solid State Physics, Academy of Sciences of the USSR, Chernogolovka

"Kinetics of Luminescence of Free and Bound Excitons in CdS Crystals"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 12, Dec 72, pp 3531-3539

**Abstract:** An investigation is made of the variation, with temperature of integral luminescence of cadmium sulfide crystals and of the bands due to annihilation of free and bound excitons. The probabilities of binding of electron-hole pairs into excitons, and of binding excitons into exciton-impurity complexes are determined on the basis of analysis of the resultant relations. Temperature intervals are determined within which quasi equilibrium can be assumed between different states of excitation of the crystal. (Quasi equilibrium takes place at temperatures above 80°K for electron-hole pairs and excitons, and above 50°K for excitons and exciton-impurity complexes on a neutral acceptor, and on a neutral donor). It is shown that an increase in the intensity of exciton luminescence (A-band) in the interval of 40-130°K can be attributed in almost equal measure to an increase in the total number of excitons and to an increase in the effective quantum yield. It is shown

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USSR

BROUDE, V. L. et al., Fizika Tverdogo Tela, Vol 14, No 12, Dec 72, pp 3531-  
-3539

that about 90% of the pumping is lost due to capture of free carriers at approximately 130°K and that the percentage falls to approximately 11.5% at low temperatures.

2/2

Acc. Nr.  
AP0037227

Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena, Truda i Professional'nyye  
Zabolevaniya, 1970, Nr 2, pp 12-14THE EFFECT OF VIBRATION ON THE ORGANISM OF BILLET AND ROLLED  
STOCK CHIPPERMENL. Ya. Tartakovskaya, N. V. Gorodnova

## Summary

Chippermen who with the aid of air chippers remove defects on the surface of billets and rolled stock are, apart from vibration and noise, also exposed to the effect of an overheated microclimates. Specificity of their work makes it possible for the vibration to become transmitted from the handle not only to the hands, as it commonly happens in this kind of work, but also to the shin and knee joints. An examination of 130 chippermen showed the clinical picture of vibration disease in them to be characterized by the syndrome of vegetative polyneuritis of both upper and lower extremities, as well as by the angiodistonic syndrome with relatively seldom encountered manifestations of the angiospasm. Functional shifts occurring in chippermen depending upon the absence or presence of vibration disease were studied.

D.N.

2

REEL/FRAME  
19730151

Acc. N.  
AP0037227

Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena, Truda i Professional'nyye  
Zabolevaniya, 1970, Nr 2, pp 12 - 14

THE EFFECT OF VIBRATION ON THE ORGANISM OF BILLET AND ROLLED  
STOCK CHIPPERMEN

L. Ya. Tartakovskaya, N. V. Gorodnova

Summary

Chippermen who with the aid of air chippers remove defects on the surface of billets and rolled stock are, apart from vibration and noise, also exposed to the effect of an overheated microclimates. Specificity of their work makes it possible for the vibration to become transmitted from the handle not only to the hands, as it commonly happens in this kind of work, but also to the shin and knee joints. An examination of 130 chippermen showed the clinical picture of vibration disease in them to be characterized by the syndrome of vegetative polyneuritis of both upper and lower extremities, as well as by the angiodistonic syndrome with relatively seldom encountered manifestations of the angiospasm. Functional shifts occurring in chippermen depending upon the absence or presence of vibration disease were studied.

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REEL/FRAME  
19730151

1/2 031

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--REACTION OF BIS(TRINITROMETHYL)MERCURY WITH DIAZO COMPOUNDS -U-

AUTHOR--(05)-FRIDMAN, A.L., IVSHIN, V.P., IVSHINA, T.N., TARTAKOVSKIY,  
V.A., NOVIKOV, S.S.  
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 729

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC NITRO COMPOUND, ORGANOMERCURY COMPOUND, AZO COMPOUND,  
NITRILE, ORGANIC SYNTHESIS, COMPLEX COMPOUND, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0747

STEP NO--UR/0062/70/000/003/0729/0729

CIRC ACCESSION NO--AP0124417

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--APO124417

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MIXING ((O SUB2 N) SUB3 C) SUB2 HG (II) WITH PH SUB2 CN SUB2 OR DIAZOFUORENE IN ET SUB2 O GAVE HG, N, AND 14PERCENT PH SUB2 C:C((NO SUB2) SUB2, M. 148-9DEGREES, OR 43PERCENT 1,1,DINITRODIPHENYLETHENE, M. 184-5DEGREES, ALONG WITH PH SUB2 CO OR FLUORENONE, RESP. THUS I MAY BE USED FOR SYNTHESIS OF GEM-DINITROALKENES. THE LATTER WERE ALSO FORMED FROM SIMILAR REACTION OF I DIOXANATE, BUT THE EVOLUTION OF N IN THIS CASE WAS LESS ENERGETIC. ATTEMPTS TO USE A MORE STABLE DIAZO COMPO., SUCH AS DIAZODIMEDONE, GAVE ONLY ITS 1:1 COMPLEX WITH I, M. 129-30.5DEGREES, WHOSE IR SPECTRUM WAS DESCRIBED. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSKOW, USSR.

UNCLASSIFIED

USSR

UDC 577.1:615.7/9

3

ZALESOV, V. S., FRIDMAN, A. L., IVSHINA, T. N., IVSHIN, V. P., TARTAKOVSKIY,  
V. A., PLAKSINA, A. N., and BOLTIK, T. V.

"Synthesis and Study of the Physiological Activity of Organomercury Nitro Compounds. I. Analysis of the Molecular Complexes of bis-(Trinitromethyl)-mercury"

Izv. Yestestvennaya Khimiya, in-ta pri Permsk. un-tu (News of the Institute of Natural Sciences, Perm University), 1970, 14, No 10, pp 159-168 (from RZh-Biologicheskaya Khimiya, No 9, May 71, Abstract No 9 F1876 from the résumé)

Translation: Synthesized molecular complexes of bis-(trinitromethyl)-mercury with diethyl-N-nitrosamine, diethylsulfone, dimethylsulfoxide, tetrahydrofuran, dioxane, and hexamethylenetetramine were found to be lacking in neurotropic, anticonvulsive, and antitremor action in mice and rats but possessing weak antimicrobial activity (*E. coli*, *staphylococci*) and high toxicity for mice after intraperitoneal injection ( $LD_{50}$  14.8 to 24.5 mg/kg or peroral administration (55 to 124 mg/kg) and for rats after peroral administration (51.4 to 305 mg/kg). Two preparations at toxic doses manifested weak analgesic action.

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USSR

UDC 621.771.28

POTAPOV, I. N., POLUKHIN, P. I., BONDARENKO, Ye. S., YAMPOL'SKIY, V. M.,  
FINAGIN, P. M., and TARTAKOVSKIY, Ye. K.

"Creating High Productivity Cross-Screw Pipe Rolling Mills"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya,"  
1970, pp 163-171

Translation: Information is given on the designs of individual and group drives of mills, two- and three-roll working stands, and forward and rear mill tables. Industrial introduction of these designs made it possible to implement new rolling conditions which resulted in a significant rise in the productivity of pipe rolling machines and in improvement in the quality of sleeves and pipes. Five figures and 13 bibliographic entries.

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NIKELOV, K. P., YELYUTIN, O. P., NIKITIN, S. A., PSHECHENKOVA, G. V., SOKOLOV,  
V. I., TARTYNOV, V. P. [Central Scientific Research Institute for Ferrous  
Metallurgy imeni Baranin, Moscow University]

"A Magnetic Alloy"

USSR Author's Certificate No. 276423, Filed 21/04/69, Published 16/10/70.  
(Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5,  
1759P).

Translation: The alloy contains Er 20-80%, Ho 20-80%, and differs from the  
earlier known Fe-Co alloy (24,600 gauss) in its higher values of saturation  
magnetism (28,500 - 32,800 gauss) at cryogenic temperatures.

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USSR

UDC 669.861.5.864.018.58(088.8)

NIKELOV, K. P., YELYUTIN, O. P., NIKITIN, S. A., PSHECHENKOVA, G. V., SOKOLOV,  
V. I., TARTYNOV, V. P. [Central Scientific Research Institute for Ferrous  
Metallurgy imeni Bardin, Moscow University]

"A Magnetic Alloy"

USSR Author's Certificate No. 276424, Filed 21/04/69, Published 16/10/70.  
(Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5,  
I760P).

Translation: The alloy contains Er 40-80%, Dy 20-60%, and differs from earlier  
known alloys in its higher values of saturation magnetism (28,500-32,800 gauss)  
at cryogenic temperatures.

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USSR

UDC 582.288.42:632.4:581.4:633.511

TARUNINA, T. A., USMANOV, Z. U., and TIME, R. N., All Union Institute of Plant Protection, Leningrad

"Morphological and Cultural Forms in Different Populations of the Fungus *Verticillium dahliae* Kleb. on Cotton"

Leningrad, Mikologiya i Fitopatologiya, No 5, 1971, pp 449-455

**Abstract:** A total of 66 *Verticillium dahliae* populations isolated from a large number of cotton varieties in Soviet Central Asia were divided into six morphological groups on the basis of differences in morphology of the colonies grown on Czapek's medium, rate of formation of microsclerotia, structure of the conidiophores, and shape and size of conidia. Clones of all six morphological forms attacked cotton varieties with different degrees of wilt resistance. The morphological group to which a clone belonged did not determine its virulent properties because the clones differed in virulence for the cotton varieties tested.

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USSR

TARUSHKIN, V. T.

"Application of the Theory of Markov Processes to Estimation of the State of Dynamic Systems and Testing of Oscillations of Flight Vehicles"

Mekh. Upravlyayem. Dvizheniya i Probl. Kosmich. Dinamiki [Mechanics of Controlled Motion and Problems of Space Dynamics -- Collection of Works], Leningrad University Press, 1972, pp 150-164 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V253, by the author).

Translation: Application of the theory of Markov processes and stochastic differential equations to estimation of the states on linear dynamic systems and testing of slight oscillations of flight vehicles in circular orbit are studied.

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USSR

NIKOLAYEV, O.A., SEMENOV, Yu. V., and ~~TARUSHKINA~~

"Constructing a Stochastic Diagnostics Test of Digital Computers in the Process of Solving Linear Differential Equations"

Moscow, V sb. Tekhn. diagnostika (Technical Diagnostics -- collection of works) "Nauka," 1972, pp 261-264 (from RZh -- Matematika, No 8, 1972, Abstract No 8V631)

Translation: The authors examine a stochastic diagnostics method for digital computer devices in the process of diagnostics method for digital computer devices in the process of solving linear differential equations with the help of the introduction of additional random action with Gaussian distribution and known statistical characteristics. The diagnosis is conducted on the basis of the system reaction to a given stimulus. Authors' abstract

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USSR

UDC: 8.74

NIKOLAYEV, O. A., SEMENOV, Yu. V., TARUSHKINA, L. T.

"On Construction of a Stochastic Test for Diagnosis of Digital Computer Devices in the Process of Solving Linear Differential Equations"

V sb. Tekhn. diagnostika (Technical Diagnostics--collection of works), Moscow, "Nauka", 1972, pp 261-264 (from RZh-Kibernika, No 8, Aug 72, Abstract No 8V631)

Translation: The article deals with synthesis of a stochastic method of diagnosing digital computer devices in the process of solving linear differential equations by introducing an additional random action with Gaussian distribution and unknown statistical characteristics. The diagnosis is done on the basis of reaction of the system to the given action.  
Authors' abstract.

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USSR

BYLINO, N. M., NAATS, I. E., TARUSIN, G. N.

UDC: 8.74

"Concerning a Class-Scheduling Algorithm"

Izv. Tomsk. politekhn. in-ta, 1972, 223, pp 44-47 (from RZh-Kibernetika,  
No 7, Jul 73, abstract No 7V661)

Translation: A problem-solving algorithm is presented which was checked  
out in scheduling day classes at Tomsk Polytechnical Institute (1500  
instructors, 600 academic groups, 500 classrooms) with a positive result.

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USSR

TARUSOV, B. N.

Sverkhslaboye svecheniye zhivykh organizmov (Low-Intensity Luminescence of Organisms), Moscow, "Znaniye", 1972, 48 p.

Annotation

The low-intensity luminescence of living organisms provides rapid and accurate information on the viability of cells. The author examines the ways in which this method can be used in medical practice and agriculture.

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USSR

TARUSOV, B. N., Sverkhslaboye svecheniye zhivykh organizmov, 1972, 48 p

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USSR

UDC 535.379:576.851.5

DOSKOCHE, Ya. Ye., PARKHOMENKO, I. M., BOGDANOVA, N. V., MAZOKHINA, N. N., and TARUSOV, B. N., Moscow State University and All-Union Institute of the Canning and Vegetable-Drying Industries

"Spontaneous and Induced Chemoluminescence of Spores From Thermophilic Microorganisms in Relation to Their Thermostability"

Moscow, Mikrobiologiya, No 5, 1971, pp 849-857

**Abstract:** Study of spores from the thermophilic strain *Bacillus aerothermophilus* showed that they do not luminesce spontaneously whether heated or not. However, passage of an electrical current through unheated spore suspensions induced luminescence at a constant level. The intensity was much lower than the luminescence emitted by suspensions heated to 120 to 130°C and the shape of the kinetic curve was much different. The intensity of luminescence was a function of the duration of heating, the maximum occurring after all the spores were killed due to destruction of the spore coat. High temperatures also affected the electrical conductance of the suspensions. In suspensions heated to 120°C the maximum current intensity occurred after 90 minutes, whereas in suspensions heated to 130°C it occurred after 3 minutes, the time when all the spores were killed, i.e., the current intensity varied with the number of dead microorganisms.

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BIOLOGY

Agriculture

USSR

TARUSOV, B.N. Chair of Biophysics

"Some Problems of Biophysics in Agriculture"

Moscow, Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye, No 2, Mar/Apr 70, pp 44-50

Abstract: Biophysics can be used with physiology and chemistry to solve the practical problem of prognosis in developing agricultural products. The varieties, their hardiness, selectivity, cross-breeding, resistance to frost, cold, heat, salt, etc, must be known. Biophysics helps to prognosticate the toxic side effects of insecticides and herbicides. All structures within the cell, the membranes, organelles, enzymes, and biopolymers, ensure the regulation and coordination of physico-chemical currents, whose disturbance injured the cell. Biophysics showed that all living cells have a stable electric potential, which ceases upon death. Using photomultipliers, biophysics also demonstrated that all living cells emit a faint, superfine light in the visible spectrum. This chemo-(not bio-) luminescence is developed by oxidative reaction, which acts through the phospholipid membranes which participate in the transport of electrons via enzymes. Zhuravlev, upon addition of anti-oxidases to a lipid system containing free radicals, reducing the oxidation

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USSR

TARUSOV, B.N., Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye,  
No 2, Mar/Apr 70, pp 44-50

of the lipid substrate. A similar flare occurs when the temperature is either raised or lowered from the critical point in both heat-resistant and cold-resistant grains, showing increased intensity of oxidation of the lipid substrate and a transition to irregular oxidative processes. Similar results were obtained with leaves in the field.

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USSR

TARUSOV, B.N., Department of Soil Biology, Moscow State University imeni M.V.  
BOKONOSOV

"The Autoregulatory Role of Antioxidants in the Adaptation of Living Organisms  
to Environmental Conditions"

Moscow, Biofizika, Vol 15, No 2, Mar/Apr 70, pp 324-332

Abstract: The ability of living bodies to adapt to changing surroundings is determined by their autoregulatory mechanisms. These mechanisms are well developed in eurythermal and euryhaline organisms, but are limited in stenothermal and stenohaline ones. Normal existence in any external environment depends on maintenance of a steady state of biochemical processes:  $dS/dt - dS_i/dt + dSe/dt = 0$ , that is, the flow of positive entropy from the cell to the outside must be equal to the negative entropy which supplies free energy for metabolic processes. The superlow biochemiluminescence (3500-6000 Å) which accompanies oxidative reactions of biolipids represents the normal steady state of chemical reactions taking place in living cells. It has been established that the phospholipid base where enzymes are located and electron transfer occurs is the weakest link in the autoregulation of the cell's energy cycle. The stability of this link depends on the activity of antioxidants and the cell's ability to maintain their concentration at the required level. A change in the external environment (temperature, salinity) is an additional

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USSR

TARUSOV, B.N., Biofizika, Vol 15, No 2, Mar/Apr 70, pp 324-332

burden on the cell and increases the utilization of antioxidants. When the antioxidative activity decreases, the oxidative functions of the cell are impaired. The ability of organisms to adapt to environmental shifts is determined by the power and ability of antioxidative systems to keep oxidative processes in a steady state.

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USSR

UDC 577.3

FEDIN, VA. A., KOZLOV, YU. P., and TARUSOV, B. N., Chair of Biophysics,  
Moscow State University

"Superweak Light Emission During Thermal Muscle Contraction"

Moscow, Vestnik Moskovskogo Universiteta, Seriya 6, Biologiya, Pochvovedeniye,  
No 6, Nov/Dec 71, pp 108-110

**Abstract:** It has been demonstrated that when muscle tissue in a humid chamber is heated, the intensity of superweak emission (chemiluminescence) increases. The connection between a fixed level of superweak emission and the changes that occur in it during heat-induced irreversible loss of excitability in the sartorius muscles of *Rana temporaria* and *Rana ridibunda* (two species of frogs with different degrees of thermal sensitivity) was studied. When the prepared muscle tissue, which had been soaked in Ringer's solution, was heated from 20° to 38°C, the intensity of luminescence increased uniformly for both species. In the interval from 38°C to 50°C, it increased sharply for *Rana ridibunda* but leveled out for *Rana temporaria*. It was also established that greater intensities of luminescence occurred if the muscles were soaked for longer periods in Ringer's solution and if this solution itself were heated. Furthermore, an increase in intensity of luminescence occurred at lower temperatures for muscles which had been soaked in Ringer's solution than in freshly prepared muscle tissue.

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USSR

UDC 542.91:547.963.3

TARUSOVA, N. B., MAZUROVA, V. V., KRAYEVSKIY, A. A., and GOTTIKH, B. P.,  
Institute of Molecular Biology, Academy of Sciences USSR

"Aminocylation of Nucleosides, Nucleotides and Polynucleotides. 11.  
Synthesis of 3'(2')-0-L- $\alpha$ -Aspartyl-adenosine-5'-phosphate"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71,  
pp 1736-1740

**Abstract:** The article shows that the imidazolide method can be extended to dicarboxylic amino acid derivatives and used for the synthesis of  $\alpha$ -aspartyl ester of adenosine-5'-phosphate as a result of the reaction of the imidazole of  $\beta$ -tert.-butyl ester of N-tert.-butylhydroxycarbonyl-aspartic acid with pA. The structure of the resultant compound was confirmed by hydrolysis and ammonolysis. The stability of the compound in aqueous solutions at various pH values was determined.

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1/2 036

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--ROLE OF LYSOSOMES IN CARCINOGENESIS AND RADIATION INJURY OF CELLS  
-U-

AUTHOR--(03)-DANILOV, V.S., KOZLOV, YU.P., TARUSOV, B.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1474-5

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIATION CELLULAR EFFECT, CHEMILUMINESCENCE, CARCINOGEN,  
LIVER, SARCOMA, ANTHRACENE, GAMMA IRRADIATION, LYMPHATIC SYSTEM,  
PEROXIDE, KETONE, ALDEHYDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1098

STEP NO--UR/0020/70/190/006/1474/1475

CIRC ACCESSION NO--AT0115117

UNCLASSIFIED

2/2 036

CIRC ACCESSION NO--AT0115117

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHEMILUMINESCENCE ACCOMPANIES THE INTERACTION OF LYSOSOMES WITH VARIOUS CARCINOGENS, INDICATING THAT THE LATTER PROVOKE FREE RADICAL REACTIONS IN THE LYSOSOME MEMBRANE. STRONG CARCINOGENS SUCH AS 3,4 BENZOPYRENE AND 20 METHYLCHOLANTHRENE (I) EXCITE STRONG LUMINESCENCE IN NORMAL LYSOSOMES, WHEREAS WEAK CARCINOGENS SUCH AS ANTHRACENE AND 1,2 BENZOPYRENE EXCITE LITTLE. I HOWEVER, I DID NOT CAUSE LUMINESCENCE IN SARCOMA 45 LYSOSOMES. LIVER LYSOSOMES TAKEN AT INTERVALS FROM ANIMALS TREATED WITH I SHOWED LUMINESCENCE INCREASES FOR UP TO 3 MONTHS AFTER TREATMENT. EXPOSING MIXTS. OF LYSOSOMES AND ANTHRACENE, 3,4 BENZOPYRENE, OR I TO 2 TIMES 10 PRIME4 LUX VISIBLE LIGHT CAUSED LUMINESCENCE IN PROPORTION TO THE TIME OF EXPOSURE AND THE CARCINOGENICITY OF THE COMPD. LYSOSOMES FROM ANIMALS EXPOSED TO 200, 650, OR 1500 R GAMMA RAYS SHOWED LUMINESCENCE IN PROPORTION TO THE AMT. KETONES WERE OBSD. IN LYSOSOMES FROM CERTAIN HEPATOMAS AND LYMPHOSARCOMAS. APPARENTLY OXIDN. REACTIONS CAUSED BY FREE RADICALS ARE INVOLVED IN CARCINOGENESIS. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr.

AP0034350

Abstracting Service  
CHEMICAL ABST.

Ref. Code

UR 0460

67393b Structural changes in a trifluorochloroethylene and ethylene copolymer at high temperatures. Tsvetkova, A. I.; Tarutina, L. I.; Dunayevskaya, I. S.; Kreitser, I. V.; Makarova, G. P.; Bereikova, T. N. (Nauch.-Issled. Inst. Polim. Plastmass, Leningrad, USSR). *Vysokomol. Soedin. Ser. B* 1969, 11(12), 885-8 (Russ.).

The oxidative thermal degradation of trifluorochloroethylene-ethylene copolymers (I) was studied in a continuous flow app. at 240-350°. The degradation was accompanied by evolution of HCl, HF, as well as low mol. wt. alcs., aldehydes, and acids. A probable degradation mechanism, involving breakdown of hydroperoxide groups and isomerization of the radicals formed, was proposed.

CKJR -

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19711009

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USER

UDC 615.214:547.349

RAZUMOV, A. I., LIORDER, B. G., ZAIKONNIKOVA, I. V., URAZAEVA, L. G., and TARZIVOLOVA, T. A., Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Studies in the Series of Phosphinic and Phosphinous Acid Derivatives.  
XXXVIII. Synthesis of Diallylphosphinic Acid Esters and Amides and Their Biological Activity"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 12, Dec 72, pp 24-28

Abstract: Addition of diallylphosphinic acid (I) with vigorous stirring to a toluene suspension of respective alcohols or amines, followed by a 3 hr reaction at 100° produced the desired esters and amides upon cooling. The following  $(C_3H_5)_2P(O)R$  products were obtained: R, b.p. 90°,  $n_D^{20}$ , and  $n_D^{20}$  being reported:  $OCH_2CH(CH_3)_2NH_2 \cdot HCl$ , - , - , - ;  $OCH_2(CH_2)_7CH_3$ , 115-6/0.07 mm, 0.9467, 1.4660;  $OCH_2(CH_2)_9CH_3$ , 156-7/0.07 mm; 0.9301, 1.4670;  $N<\begin{array}{c} CH_2CH_2 \\ | \\ CH_2CH_2 \end{array}>CH_2$ , 112-4/0.05 mm, 1.0279, 1.5600;  $N<\begin{array}{c} CH_2CH_2 \\ | \\ CH_2CH_2 \end{array}>O$ , 132-4/0.05 mm 1.0950, 1.5100;  $N(C_3H_7)_2$ , 117-9/0.04 mm, 0.9535, 1.4810; and  $N(C_4H_9)_2$ , 124-6/0.03 mm, 0.9376, 1/2

USSR

RAZUMOV, A. I., et al., Khimiko-Farmatsovicheskiy Zhurnal, Vol 6, No 12,  
Dec 72, pp 2 -28

1.4770. Propargyl ester of diallylphosphinic acid -- the most active agent -- was prepared by mixing the acid chloride of (I) with the alcohol and triethylamine in ether and stirring for 4 hrs. The product boiled at 97-8°/0.05 mm,  $d_4^{20} = 1.0529$ , and  $n_D^{20} = 1.4900$ . Acid chloride of (I) added to 3-aminobutanol-1 in 200 ml of dichloroethane followed by a 2 hr reaction at 60°, removal of the dichloroethane, addition of sodium alkoxide in absolute ether yielded 3-amino-butyl ester of (I) after centrifugation and repeated filtration; b.p. 173-6°/ $10^{-4}$  mm,  $d_4^{20} = 1.0466$ ,  $n_D^{20} = 1.4900$ .

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USSR

UDC 547.26'118  
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RAZUMOV, A. I., KRIVOSHEYEVA, I. A., LIORBER, B. G., TARZIVOLOVA, T. A.  
and PAVLOV, V. A., Kazan' Institute of Chemical Technology imeni S. M.  
Kirov

"Investigation in the Series of Phosphinic and Phosphinous Acid Derivatives.  
LXXXII. Kinetics of Hydrolysis of Diallylphosphinic Acid Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72, pp 496-498

**Abstract:** Biologically active compounds have been found among the diallyl-phosphinic acid esters. The authors investigate the kinetics of uncatalyzed hydrolysis of these esters in an effort to determine the effect of the structure of the alkoxy radicals on their reactivity. Compounds of the  $(CH_2=CHCH_2)_2P(O)OR$  type containing saturated radicals of normal and branched structure as well as unsaturated radicals with double and triple bonds in the ester group ( $R = CH_3, C_2H_5, n.-C_3H_7, iso-C_3H_7, C_4H_9, iso-C_4H_9, sec.-C_4H_9, CH_2=CH, CH_2=CHCH_2, CH_3CH=CHCH_2, CH=CCH_2$ ) were selected for study. The kinetics of hydrolysis were checked by titration. Preliminary experiments showed that diallylphosphinic acid and the corresponding alcohol formed during the reaction have no effect on the course of hydrolysis. Diallylphosphinic acid needed for the experiments was synthesized by treating diallylphosphinic  
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USSR

RAZUMOV, A. I., et al., Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72,  
pp 496-498

acid chloride with equivalent quantities of water. The experimental data indicate that the hydrolysis of these esters takes place with splitting of the C-O bond. The monomolecular reaction is apparently the rate determining step for the reaction of the esters studied. The results of the work may be useful in studying the alkylating capacity of diallylphosphinic acid esters.

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USSR

UDC 547.341 + 542.955.1.2

LIORBER, B. G., KHAMMATOVA, Z. M., TARZIVOLOVA, T. A., RAZUMOV,  
A. I., Kazan' Chemical-Technological Institute imeni S. M. Kirov,  
Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Studies of the Derivatives of Phosphinic and Phosphinous Acids.  
LXX. Esters of Epoxidized Phosphinic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70,  
pp 1699-1704

Abstract: Reaction of unsaturated phosphinic acid esters containing allyl type radicals with 65-80% peracetic acid gave a series of  $\beta$ ,  $\gamma$ -epoxyphosphinic acids. The structures of the products obtained were determined by IR and NMR spectra. The epoxides could be opened by aqueous HCl, yielding  $\beta$ ,  $\gamma$ -dihydroxybutylmethylphosphinic acid esters. The reaction occurred smoothly, probably because of the inductive effect of the methyl group, which counteracted the influence of the P:O group. The epoxides were tested for chemo-sterilant activity against the common house fly; the monoepoxides were found inactive and the diepoxides showed sterilizing activity.

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USSR

UDC 911.3:613.6(575.1)

DIMANT, I. N., TASHBEKOV, B. U., DAVYDOV, Ya. S., and BOLOTOVA, M. N.

"Comparative Evaluation of the 3.4-Benzpyrene Content in the Air of Some Uzbekistan Cities"

V sb. Epidemiol. zlokhachestven. opukholey (Tumor Epidemiology --- collection of works) Alma-Ata, "Nauka," 1970, pp 451-454 (from RZh-Meditsinskaya Geografiya, No 4, Abstract No 4.36.146)

Translation: The highest air contamination indicators were found in Angren and Almalyk. The chief cause of 3.4-benzpyrene in the air of Almalyk, Chirchik, Akhangaran and Bekabad is automobile exhaust gases. Heavy smoke contamination was noted in Angren. Great sources of contamination in Angren are the State regional electric power station and the Construction Material Combine (0.54-0.77 Mg/100 m<sup>3</sup> in the summer and 0.92-1.15 M/100 m<sup>3</sup> in the winter). In the area of the Tashkent highway, the level is 0.85 Mg/100 m<sup>3</sup>. The Almalyk winter carcinogen concentration in the industrial zone is 0.35 Mg/100 m<sup>3</sup>; in the residential zone, it is 0.19 M/100 m<sup>3</sup> in summer and 0.25 Mg/100 m<sup>3</sup> in the winter. Corresponding figures for the city highways are 0.94 and 0.98 Mg/100 m<sup>3</sup>. The lowest 3.4-benzopyrene concentrations are in the green belt around Bekabad (0.032 Mg/100 m<sup>3</sup> in the summer and 0.077 Mg/100 m<sup>3</sup> in the winter).

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USSR

UDC: 621.317.77

SUP'YAN, V. Ya., KHILIN, N. S., TASHCHENKO, S. P., SIMON, S. Kh.

"A High Precision Digital Phase Meter for the 5-1000 MHz Frequency Band"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp110-112 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A331)

Translation: In developing a phase meter, the authors utilize the principle of increasing the multiplicity of frequency conversion. The fundamental instrument range of 5-140 MHz is extended to 1000 MHz by means of an attachment consisting of a vacuum-tube frequency converter. Thanks to the use of a single conversion stage, the accuracy of measuring phase displacements in the 0-360° range is no worse than  $\pm 0.2^\circ$  for equal levels of the input signals from 0.4 mV to 0.4 V. With a change in the level of the input signals by 60 DB, the dynamic amplitude-phase error is no greater than  $\pm 4^\circ$ , with a corresponding figure of  $\pm 2\%$  for changes by 40 DB. In the expanded range on a frequency of 500 MHz and on the first intermediate frequency of 50 MHz, the drift in readings is no more than  $\pm 1\%$  per hour. It was possible to reduce amplitude-phase errors by using limiter-amplifiers on the intermediate frequency with small dynamic errors. Some data are given on these limiter amplifiers. E. L.

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USSR

UDC 669-937:669.24

SOROKINA, N. A., UL'YANIN, YE. A., TASHCHILOV, V. S., RASTORGUYEVA,  
I. A., KUBORSKIY, B. N.

"Structure and Properties of Nickel Alloys for Cryogenic  
Temperatures"

Moscow, Metallovedeniye, No 10, 1971, pp 20-23

**Abstract:** The use of dispersion-hardening alloys based on iron and nickel for operation at cryogenic temperatures was experimentally investigated. The results are discussed by reference to diagrams showing 1) the effect of test temperature on plasticity of the experimental nickel alloys with different iron contents alloyed with 2.5% Nb and 3% Ti, 2) the plasticity and ductility of nickel alloys (18% Cr, 9% Mo, 2.5% Nb) as a function of iron content, 3) the aging kinetics of nickel alloys, and the effect of introduction of Nb on the strength. Nickel alloys containing 1.5% Al and 5-15% Fe were found to meet the required demands of strength, plasticity, ductility, and welding properties. The KhN63M9B2Yu alloy has been developed for welded structures operating at temperatures from -253°C to 750°C. This alloy has

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USSR

SOROKINA, N. A., et al, Metallovedeniye, No 10, 1971, pp 20-23

sufficiently high resistance to crack development in welding and  
subsequent heat treatment. 6 illustrations, 1 table, 2 bibliographic references

2/2

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USSR

UDC 546.72+547.13+546.17+547.31

TASKCHUK, K. G., VITTAL', E. E., Chernovtsy State University, Chernovtsy  
Medical Institute

"Ammonium Salts Based on N,N-Dimethylaminomethylferrocene and Substituted  
Bromomethylstilbenes and Tolanes"

Ivanovo, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Khimiya i Khimicheskaya  
Tekhnologiya, Vol 14, No 10, 1971, pp 1527-1529

**Abstract:** Mono- and ditertiary ammonium salts containing a ferrocene nucleus were synthesized from N,N-dimethylaminomethylferrocene and bromo derivatives of stilbene and tolane. A solution of 75 ml p-carbethoxyphenyldiazonium chloride prepared by diazotization of 16.5 g ethyl-p-aminobenzoate was added dropwise to a mixture of 12 g p-methyl- $\alpha$ -chlorostyrene in 80 ml acetone and 4 g CuCl<sub>2</sub>·2H<sub>2</sub>O. After 2.5 hrs 200 ml ice water was added precipitating p-methyl-p'-carbethoxy- $\alpha$ -chlorostilbene (I), m.p. 52-53°. A solution of 15 g (I) in 50 ml alcohol and 8.4 g NaOH in 20 ml water was refluxed for 6 hrs, then poured into 150 ml water yielding 11 g of p-methyl-p'-carboxytolane (II), m.p. 191-192°. A mixture of 6 g (II), 7 g decyl alcohol, and 0.5 ml H<sub>2</sub>SO<sub>4</sub> was heated for 5 hrs yielding 8.3 g p-methyl-p'-carbdecyloxytolane

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USSR

TASHCHUK, K. G., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Khimiya i Khimicheskaya Tekhnologiya, Vol 14, No 10, 1971, pp 1527-1529

(III), m.p. 59-60°. Reacting (I) and (III) with N-bromosuccinimide converted it to p-bromomethyl-p'-carbethoxy- $\alpha'$ -chlorostilbene, m.p. 69-70°, and p-bromomethyl-p'-carbdecyloxytolane, m.p. 76-77° respectively. To a solution of 0.005 g-mole of bromomethylstilbene or tolane in 5 ml of anhydrous benzene 0.005 g-mole of N,N-dimethylaminomethylferrocene (IV) in 5 ml benzene was added dropwise yielding the monotertiary salts of title compounds; to get the ditertiary salts the amount of (IV) was increased to 0.01 g-mole; product, m.p. C are reported: dimethyl-(ferrocenyl)-(4-styrylbenzyl)-ammonium bromide, 191-192; dimethyl-(ferrocenyl)-(4- $\alpha'$ -chlorostyrylbenzyl) ammonium bromide, 189-190; dimethyl-(Ferrocenyl)-(4-nitro- $\alpha'$ -chlorostyrylbenzyl)ammonium bromide, 184-185; dimethyl-(ferrocenyl)-(4-carbethoxy- $\alpha'$ -chlorostyrylbenzyl)-4'- (carbdecyloxy)-tolane bromide, 195-196; 4,4'-bis(d9methylferrocenylmethylammoniummethyl)-stilbene dibromide, 73-75; 4,4'-bis-(dimethylferrocenylmethylammoniummethyl)- $\alpha'$ -chlorostilbene dibromide, 98-99; 4,4'-bis-(dimethylferrocenylmethylammoniummethyl)-tolane, dibromide, 156-158.

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017  
TITLE--EFFECT OF SOME PHARMACOLOGICAL SUBSTANCES AND PHYSICAL FACTORS ON  
THE BILE EXCRETORY FUNCTION IN HEALTHY INDIVIDUALS AND IN PATIENTS WITH  
AUTHOR--(04)-BELOUSOV, A.S., TASHEV, T., GRYUNCHARDOV, V., ZHIGALOVA, M.F.  
COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 54-61  
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BILE, SECRETION, ATROPINE, DUODENUM, DRUG EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0439

CIRC ACCESSION NO--AP0117675

STEP NO--UR/0504/70/042/004/0054/0061

UNCLASSIFIED

017  
CIRC ACCESSION NO--AP0117675  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. THE AUTHORS SUGGEST A NEW METHOD OF STUDYING BILE SECRETION AND BILE EXCRETION IN HUMAN BEINGS. ITS ADVANTAGES AS COMPARED TO OTHER METHODS ARE SHOWN. MATERIAL CONCERNING THE EFFECT OF PHARMACOLOGICAL SUBSTANCES (ATROPINE, MYCERIN) ON BILE EXCRETION IN TO THE DUODENAL REGION IS GIVEN. THE AUTHORS DRAW THE READER'S ATTENTION TO AN UNTOWARD EFFECT OF ATROPINE ON THE BILE SECRETORY FUNCTION IN THE TREATMENT OF PATIENTS WITH PEPTIC ULCER. THEREFORE, IT IS RECOMMENDED THAT COLAGOGUE MEANS (MEDICINAL, DIGESTIVE AND PHYSIOTHERAPEUTIC) SHOULD BE INCLUDED INTO THE COURSE OF TREATMENT WITH ATROPINE AND ATROPINE LIKE AGENTS.

FACILITY: KAFEDRA  
RASTROENTEROLOGII I DIYETOTERAPII TSENTRAL'NOGO INSTITUTA  
USOvershenstvovaniya vrachey, Moscow.

FACILITY: KAFEDRA  
RASTROENTEROLOGII ISUL, SOFIA.

UNCLASSIFIED

USSR

UDC 543.426.541.49.546.831

TASHKUODZHAYEV, A. T., ZEL'TSER, L. YE., KHIKNATOV, KH., Tashkent Order of the  
Red Banner of Labor State University imeni V. I. Lenin

"Study of the Luminescent Reaction of Complex Formation of Salicylal-4-amino-  
antipyrine with Zirconium".

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 3, 1972, pp 22-24

**Abstract:** Results are presented of a study of the luminescent reaction of complex formation of zirconium with azomethyne salicylal-4-aminoantipyrine (SAAN). The azomethyne compound of SAAN forms a luminescent complex compound with zirconium at a pH of 1-2. The maximum fluorescence of the complex is observed for  $\lambda = 554$  nm. The components interact in the molar ratio of 1:2. The complex is electroneutral. The objective criterion of sensitivity (the product of the molar coefficient of the light absorption times the quantum yield of the fluorescence) increases by comparison with the reagent by 53 times. The sensitivity with respect to 38 criteria is 0.04 microgram/5 ml. SAAN is the most sensitive and selective reagent to zirconium of the azomethyne compounds. Therefore, the investigated reaction can be used as a basis for a method of luminescent quantitative analysis of zirconium.

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UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--SPECIFIC ULTRASTRUCTURAL FEATURES OF THE SMALL INTESTINE MUCOSA IN  
PATIENTS WITH CHRONIC ENTEROCOLITIS HU-

AUTHOR--(04)-ZUFAROV, K.A., TASHKHOZHAYEV, P.I., SHISHOVA, YE.K.,

VAYSBROT, V.V.

COUNTRY OF INFO--USSR

SOURCE--ARKH PATOL 32(1): 45-52. ILLUS. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ENTEROCOLITIS, SMALL INTESTINE, BIOPSY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0237

STEP NO--UR/9056/70/032/001/0045/0052

CIRC ACCESSION NO--AP0134042

UNCLASSIFIED

2/2 017

CIRC ACCESSION NO--AP0134042

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAMPLES OF THE SMALL INTESTINE MUCOSA WERE OBTAINED FROM PATIENTS SUFFERING CHRONIC ENTEROCOLITIS BY USING THE ASPIRATION BIOPSY METHOD. PRISMATIC CELLS OF THE EPITHELIUM WERE STUDIED BY MEANS OF ELECTRON MICROSCOPY. A LARGE NUMBER OF PRISMATIC ABSORBING CELLS WERE DEMONSTRATED WITH ACCUMULATED AND SECRETED MUCIGEN THUS CHANGING THEIR FUNCTION. THE EPITHELIAL CELLS ARE CONSIDERED PROTECTIVE. THIS REACTION MAY REPRESENT A MORPHOLOGIC BASIS OF THE MALABSORPTION SYNDROME IN PATIENTS SUFFERING FROM CHRONIC ENTEROCOLITIS.

FACILITY: TASHKENT MED. INST., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC 576.895.4

KOCHKAREVA, A. V., ZAGNIBORODOVA, Ye. N., ZHERNOV, I. V., ZAYTSEVA, V. I., SHILENKO, V. I., ZABEGALOVA, M. N., AVAKOV, S. M., TASHLYEV, A. O., BEL'SKAYA, G. S., and VAZHEV, A. P., Republic Antiplague Station, Institute of Zoology, Academy of Sciences Turkmen SSR

"Regional Distribution of Ixodid Ticks in Turkmenia"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh Nauk, No 5, 1971, pp 36-42

**Abstract:** The 31 species and subspecies of Ixodid ticks (of the total of 49 living in Turkmenia) gathered from 699 geographic points and included in the collection of the station are analyzed for the distribution of their natural habitats and their geological and botanic living conditions. *Hyalomma asiaticum asiaticum* proliferates in large numbers in all four regions (clay desert, sandy desert, cultivated river valleys, and southern mountains). *H. detritum* an. *anatolicum*, *H. an. excavatum*, and *H. pl. plumbeum* thrive mainly in cultivated areas. The most numerous species are *H. as. asiaticum* and *H. numidiana turanica* living in sandy desert and *Ornithodoros tartakovskyi* living in clay desert. *Ixodes redikorzevi*, *Haemaphysalis punctata*, *Rhipicephalus schulzei*, and *R. leporis* were recorded for the first time in the republic.

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USSR

UDC 598.2/9:591.557.2

TASHLIYEV, A. O., Institute of Zoology, Academy of Sciences Turkmen SSR  
"The Effects of Agriculture on the Formation of Ornithological Complexes in  
Southeast Turkmenia"

Ashgabat, Izvestiya Akademii Nauk Turkmeneskoy SSR, Seriya Biologicheskikh  
Nauk, No 4, 1971, pp 61-66

**Abstract:** Since deserts and semidesert regions in Turkmenia have been radically changed by agricultural progress, long-term ornithological effects were investigated in the valleys of the Amu-Darya, Murgab, and Tedzhen rivers and in the region of the Kara Kum Canal, which were formerly wastelands. These areas are now inhabited by 50 species of waterfowl, 46 species of birds, and 35 species of desert birds. The number of migrating birds stopping over for rest or overwintering there is also large. This proliferation of birds is due to construction of dams, water reservoirs, and irrigation channels and to the establishment of national parks, oases, private gardens, and irrigated crop fields. While pesticides are responsible for the death of a moderate number of birds, the main destruction is caused by men shooting birds with guns especially machine guns.

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USSR

UDC 613.646

SHLEYIFMAN, F. M., ZHIRKOVA, G. Ye., ZELENISOVA, S. P., MARCHEJKO, TASHKER, I. D.  
and MOKROTOVAROVA, G. N., Kiev Institute of Industrial Hygiene and Occupational  
Diseases

"Hygienic Assessment of the Effects of Exposure to Heat"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1973, pp 12-15

**Abstract:** Rabbits and rats exposed to infrared radiation at the rate of kcal/m<sup>2</sup>/hour for varying lengths of time exhibited changes in body weight, behavior, immunological reactivity (decrease in antibody titers and phagocytic activity of leukocytes), hormonal activity, tissue respiration in the liver and skeletal muscles, oxidative phosphorylation, etc. The magnitude of the changes varied with the duration and nature of the exposure (continuous or intermittent), intensity of radiation, relationship between time of irradiation and rest periods, etc. Infrared radiation also brought about changes in humans. The heart rate, blood pressure, body temperature, etc. were affected, the degree varying mainly with the intensity and duration of exposure, and the length of the interval between exposures.

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USSR

UDC 541.15:678(744-746)-13

TASHMUKHAMEDOV, S. A., KARABAYEV, A. SH., TILLAYEV, R. S., Tashkent Order of  
the Red Banner of Labor State University imeni V. I. Lenin

"Radiation Copolymerization of Vinyl Acetate with Vinyl Pyrrolidone"  
Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 3, 1972, pp 54-56

**Abstract:** A study was made of the kinetics of copolymerization of vinyl acetate with vinyl pyrrolidone as a function of the dosage, radiation power, nature of the solvents and concentration of the initial mixtures. During copolymerization of vinyl acetate with vinyl pyrrolidone in the dose range from 0.1 to 1.0 m rads, a power of 70 rads/sec in the mass, methanol and benzene, significant conversion of the monomers is observed at doses of 0.8-1.0 mrads. The copolymer is enriched with vinyl pyrrolidone for all ratios of the initial components. The values of the copolymerization constants, the specific activity and the polarity found agree with the published data [Yu. D. Semchikov, et al., Vysokomolek. sovied., B12, 381, 1970]. The yield of the copolymers synthesized in the mass with an integral dose of 0.5 mrads decreases from 94 to 34 percent with an increase in the dose intensity from 6 to 207 rads/sec. This arises from an increase in the detachment rate of the growing chains. The exponent  $n = 0.68$  in the equation  $V = kI^n$  deviates from 0.5 toward higher values in connection with a decrease in the collision probability of the growing chains formed in the solid phase.  
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USSR

UDC 616.12-007-053.1-089.5-06

SERGIYEVSKIY, V. S., TASHPULATOV, A. T., CHERNOV, V. K., NUGMANOV,  
YE. K., YAVORSKAYA, G. V., ERENBURG, T. A., LIZUNKOVA, L. P., and  
TSYBANEVA, N. G., Department of Cardiovascular Surgery, Kazakh  
Institute of Clinical and Experimental Surgery, Ministry of Public  
Health, Kazakh SSR, Alma-Ata

"Operative Complications During Correction of Congenital Heart De-  
fектs Under Conditions of Moderate Hypothermia"

Moscow , Grudnaya Khirurgiya, No 2, 1970, pp 57-62

Abstract: A total of 230 operations were performed using hypothermia  
at the institute from 1965 to 1969, operations were conducted to  
correct septal defects, pulmonary and aortic stenosis, tetralogy  
of Fallot, combined and rare defects. Among the life-threatening  
complications encountered in the operations were asystole, ventri-  
cular fibrillation, aeroembolism of the coronary vessels, loss  
of blood, atrioventricular and bundle-branch heart block. The causes  
of the complications are analyzed and suggestions made to prevent  
them and to control those that occur. With the present level of  
knowledge, mortality during operations performed under moderate  
hypothermia should not exceed 1%.

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7676

CSO: 1840 (92 pages)

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- 92 -

USSR

UDC 340.67:615.285.7

TASHFULATOV, A. YU., and IKRAMOV: Tashkent Pharmaceutical Institute

"Determination of Residual Methyl Mercaptophos in Biological Matter"

Moscow, Farmatsiya, Vol XX, No 6, Nov-Dec 71, pp 63-66

**Abstract:** Extraction with ether and chloroform have been recommended in determining the amount of residual methyl mercaptophos in foods and vegetable products; but no adequate procedures for making corresponding determinations in the case of objects of forensic chemical research have been arrived at, despite the widespread use of this insecticide in Soviet agriculture.

Using ground human liver tissue as a test object (50 mg of methyl mercaptophos mixed with 100 g of tissue), the authors tried six different extractants to measure residual mercaptophos: benzene, chloroform, dichloroethane, diethyl ether, n-butyl alcohol, and petroleum ether. In addition, they studied extractive methods in current use (steam distillation, and extraction with acidified alcohol and acidified water), as well as the effect of repeated application of the extractant, delay between ingestion and extraction, and the degree of acidity.

Chloroform was found to be the most effective extractant, when used in

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USSR

TASHPULATOV, A. YU., and IKRAMOV, Farmatsiya, Vol XX, No 6, Nov-Dec 71, pp 63-66  
four new portions at pH of 2-5. Details of laboratory procedure, as well  
as tabular summaries of data obtained, are included in the paper.

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UDC 340.67:615.285.7

USSR

IKRAMOV, L. T., TASHPULATOV, A. YU., and ABDUVAKHABOV, K. A.,  
Tashkent Pharmaceutical Institute

"Reactions for Detection of Methylmercaptophos in Forensic Chemical  
Analysis"

Moscow, Farmatsiya, Vol 19, No 6, Nov-Dec 70, pp 70-73

Abstract: It has been determined that methylmercaptophos (I) reacts specifically with mercuric chloride, mercuric bromide and iodine monochloride. Other structurally related pesticides failed to exhibit this specificity. To a drop of alcohol or water solution of I placed on a slide a drop of 2% aqueous solution of mercuric chloride is added and left standing for 15-20 min in a humidity chamber. Under microscope yellow microcrystals can then be observed. Sensitivity -- 0.8 $\mu$ g of (I) with a dilution of 1:50 000. This method can be used to analyze biological material, the sensitivity being 3 mg of (I) per 100 g of the biological material.

1/1

- 5 -

USSR

IKRAMOV, L. T. and TASHPULATOV, A. Yu., Chair of Toxicological Chemistry, Tashkent Pharmaceutical Institute

UDC 340.67:615.285.7

"Chromatographic Purification of Methylmercaptophos in Investigations of Biological Material"

Moscow, Sudebno-Meditsinskaya Ekspertiza, Vol 13, No 4, Oct/Nov/Dec 70,  
pp 36-39

Abstract: A method is described for chromatographic separation of methylmercaptophos from various admixtures in biological material obtained with the use of chloroform. The method involves the use of paper and thin-layer chromatography. Preliminary tests were conducted to determine the most efficient organic solvent for elution. Ethyl alcohol, acetone, methyl alcohol, dichloroethane, chloroform, and carbon tetrachloride were tested, and ethyl alcohol was found to be most effective. A pure solution of methylmercaptophos in ethyl alcohol was used to determine the effectiveness of the chromatographic method in isolating methylmercaptophos from its admixtures. Positive results were obtained and confirmed by microcrystal tests with mercuric chloride, mercuric bromide,

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USSR

IKRAMOV, L. T. and TASHPULATOV, A. Yu., Sudebno-Meditsinskaya Ekspertiza, Vol 13,  
No 4, Oct/Nov/Dec '70, pp 36-39

iodone monochloride, and cholinesterase. On the basis of these results, chloroform extracts of the test material were evaporated in a water bath at a temperature not exceeding 50°C; the residue was dissolved in alcohol and filtered, and the filtrate was deposited on chromatographic paper or a membrane containing a layer of silica gel. The chromatographic paper or membrane was then examined under ultraviolet light. Spots on the chromaphotograms corresponding to the reference spot obtained in the tests with the pure solution of methylmercapto-phos in alcohol were eluated and subjected to quantitative and qualitative analysis.

2/2

- 36 -

USSR

UDC 616.981.25-097.5-02:613.166.9(99)

TASHPULATOV, B. YU., NORDVINOVA, N. B., and ROGUNOVA, K. A., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Microbiological and Immunological Studies of the Human Organism in Antarctic Conditions. III. Characteristics of Staphylococcus Infection in an Isolated Collective"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71,  
pp 68-73

**Abstract:** The Staphylococcus flora of the upper respiratory passages (nose and pharynx) and the skin of 14 participants in the 12th USSR Antarctic Expedition was investigated during 10 mo of isolated sojourn of the participants as a group at the Antarctic station Novolazarevskaya. A bacteriological study was conducted every month. A total of two hundred and fifty Staphylococcus strains were isolated, 81 of which were pathogenic and 169 nonpathogenic. The pathogenic Staphylococci differ in properties (including sensitivity to antibiotics) from those isolated from healthy carriers in Moscow. Their distribution among individuals was also the same. As a rule, pathogenic Staphylococci isolated from any one person were of the same phage type. All 14 persons were constant carriers of nonpathogenic Staphylococci and 10 of them carried in addition pathogenic Staphylococci. Presence of Staphylococci in the pharynx was more 1/2

USSR

TASHPULATOV, R. YU., et al., Zhurnal Mikrobiologii, Epidemiologii i Immuno-biologii, No 4, Apr 71, pp 68-73

frequent than under ordinary conditions. Some of the carriers of pathogenic Staphylococci (one of them developed bilateral hydroadenitis and was evacuated from the station for this reason) transmitted them to other members of the group in the form of a latent infection not accompanied by disease. As shown by a study of the four subjects carrying nonpathogenic Staphylococci only, these Staphylococci were gradually eliminated from the upper respiratory passages during sojourn in the Antarctic.

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1/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--TIDAL EFFECT AND THE POSSIBILITIES OF THE FORMATION OF BRIDGES AND  
TRAILS IN GALAXIES. II POSSIBILITY OF THE FORMATION OF TRAILS IN

AUTHOR--TASHPULATOV, N.

COUNTRY OF INFO--USSR

SOURCE--ASTRONOMICHEISKII ZHURNAL, VOL. 47, NO. 2, 1970, P. 277-291

DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--GALAXY, HYDRODYNAMICS, MOTION EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1475

CIRC ACCESSION NO--AP0125103

UNCLASSIFIED

STEP NO--UR/0033/70/047/002/0277/0291

2/2 024

UNCLASSIFIED

PROCESSING DATE--23 OCT 70

CIRC ACCESSION NO--AP0125103

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDRODYNAMIC ANALYSIS OF THE FLOW OF MATTER FROM THE APEX OF AN EXTENDED HOMOGENOUS ELLIPSOIDAL GALAXY WHICH ROTATES AT A GIVEN CONSTANT ANGULAR VELOCITY, AND APPROACHES A POINT GALAXY HAVING A PARABOLIC ORBIT AND A GIVEN PERICENTRIC DISTANCE. CALCULATIONS ARE CARRIED OUT FOR TWO VALUES OF THE MASS AND PERICENTRIC DISTANCE OF THE POINT GALAXY. THE RUNGE KUTTA METHOD IS USED TO INTEGRATE THE DIFFERENTIAL EQUATIONS DESCRIBING THE MOTION OF A HYDRODYNAMIC ELEMENT OF THE MASS OF DISCHARGED MATTER. THE RESULTS SUGGEST THE FORMATION OF BRIDGES AND TRAILS IN INTERACTING GALAXIES.

FACILITY: LENINGRADSKIY GOSUDARSTVENNYI UNIVERSITET, LENINGRAD,  
USSR.

UNCLASSIFIED

USSR

UDC 612.119(99)

TASHPULATOV, R. Yu., RODINA, R. I., IONIN, A. I., and PONOMAREVA, N. G.,  
Institute of Epidemiology and Microbiology imeni Gamaleya, Central Institute  
of Hematology and Blood Transfusion, and Arctic and Antarctic Scientific  
Research Institute

"Microbiological and Immunological Studies of the Human Body in the  
Antarctic. III. Dynamics of Hematopoiesis in Polar Explorers During an  
Expedition"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971,  
pp 81-83

**Abstract:** The dynamics of the hemoglobin concentration, RBC and WBC counts,  
color index, and leukocyte formula was studied in 14 Antarctic explorers in  
relation to the time of year. The hemoglobin concentration was found to be  
directly related to solar activity. It decreased during the polar night  
when solar activity was low but increased to the normal value during the  
summer when solar activity was high. The RBC count fluctuated within  
narrow limits. The leukocyte count tended to decrease during the year.  
The color index curve virtually duplicated that of the hemoglobin concen-  
tration. The leukocyte formula shifted slightly to the left at first, i.e.,  
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USSR

TASHPULATOV, R. Yu., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 81-83

the stabs increased while the segs, eosinophils, and lymphocytes remained unchanged and the monocytes decreased. During the latter part of the winter the number of stabs returned to the original level while the segs decreased and the eosinophils and lymphocytes increased. The relative and absolute lymphocytosis and moderate neutropenia persisted until the end of winter.

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72- 029 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--SYNTHESIS AND INFRARED SPECTROSCOPIC STUDIES OF CELLULOSE MODIFIED  
WITH 2, MERCAPTOBENZOTIAZOLE DERIVATIVES -U-  
AUTHOR-(05)-GRIGORYAN, G.L., TULYAGANOV, M.M., GAFUROV, T.G., ADYLOV, A.,  
TASHPULATOV, YU.T.  
COUNTRY OF INFO--USSR  
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 753-60  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, IR SPECTRUM, SPECTROSCOPIC ANALYSIS,  
CELLULOSE, MERCAPTAN, BENZENE DERIVATIVE, EPICHLOROHYDRIN, CHEMICAL  
REACTION MECHANISM, CHEMICAL BONDING, THIAZOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
ROXY REEL/FRAME--3006/1228

STEP NO--UR/0459/70/012/004/0753/0760

IRG ACCESSION NO--A90134902

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 029  
IRC ACCESSION NO--AP0134902

ABSTRACT--(U) GP-0- ABSTRACT.

3,(3,CHLORO,2,HYDROXYPROPYL)BENZOTHIAZOLE,2,THIONE (I) AND  
3,(3,EPOXYPROPYLTHIO)BENZOTHIAZOLE (II) WERE PREPARED FROM  
2,(2,3,EPOXYPROPYLTHIO)BENZOTHIAZOLE (CAPTAX) (III) AND EPICHLOROHYDRIN. A REACTION  
MECHANISM IS PROPOSED. CELLULOSE (IV) HAS MODIFIED WITH I, II, AND A  
1:1 III,OCN(CH<sub>3</sub>)<sub>2</sub> SUBG NCO ADDUCT AT 150DEGREES TO GIVE S AND N  
CONTG. PRODUCTS. SPECTRAL DATA SHOWED THAT THE MODIFYING AGENTS WERE  
CHEM. BOUND TO IV. FACILITY: NAUCH.-ISSLED. INST. KHM.  
TEKHNOL. KHLOP. TSELLYUL., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC 002.513.5:676.815.2:547  
PORTYANSKIY, A. YE., LOKSINA, N. T., TASHPULATOV, YU. T., MAMEDOVA, V.  
M., and MEKHTIYEV, S. I.

"The Use of Punched Cards for the Solution of Specific Problems in IR  
Spectroscopy"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1 -- Organizatsiya  
i Metodika Informatsionnoy Raboty, No 2, 1970, pp 28-30

Abstract: The article describes a direct code developed by the authors  
for cataloging data and solving specific spectrochemical problems which  
occur in the practical analysis of aliphatic nitriles ( $C \leq 10$ ). A  
standard K5 two-row edge-notched card is used. To facilitate the cod-  
ing, a stencil (tracing paper) with code scheme and elements (some of  
them borrowed from the IIMS system) is pasted onto each punched card.  
The horizontal rows of perforations are designed for recording (all) ab-  
sorption frequencies; and the vertical rows, for structure coding. The  
code scheme is supposed to reflect the relative arrangement of groups

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USSR

PORTYANSKIY, A. YE., et al., Nauchno-tekhnicheskaya Informatsiya,  
Seriya 1 -- Organizatsiya i Metodika Informatsionnoy Raboty, No 2,  
1970, pp 28-30

with respect to the CN group. The code is suitable for the catalog-  
ing of IR spectra, detailed coding of the structures of various com-  
pounds, as well as for finding "structure-spectrum" correlations.

2/2

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--EFFECT OF DIFFERENT CARBON SOURCES ON CELLULOOLYTIC ENZYME  
BIOSYNTHESIS BY HEAT TOLERANT AND MESOPHILIC FUNGI RELATED TO  
AUTHOR--TASHPULATOV, ZH.

COUNTRY OF INFO--USSR

SOURCE--UZB. BIOL. ZH. 1970, 14(2), 14-16

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FUNGUS, ASPERGILLUS, CONTINUOUS CULTURE, CULTURE MEDIUM,  
CARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0017

STEP NO--UR/9079/70/014/012/0014/0016

CIRC ACCESSION NO--AP0137216

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137216

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BEST C SOURCES FOR FUNGAL GROWTH AND CELLULOLYTIC ENZYME FORMATION WERE FILTER PAPER AND COTTON WOOL. SUCROSE AND GLUCOSE STIMULATED FUNGAL GROWTH BUT INHIBITED THE BIOSYNTHESIS OF CELLULOLYTIC ENZYMES.

UNCLASSIFIED

Pharmacology and Toxicology

USSR

UDC 615.214.3

KHOLODOV, L. Ye., TASHUNSKIY, AL'TSHULER, R. A., MASEKOVSKIY, M. D., KOSHCHINA, L. F., SHERSHNEVA, S. I., LEYEL'MAN, F. Ya., VOLZHINA, O. N., GORODETSKIY, L. Sh., and PETROVA, N. A., All-Union Chemical and Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Sydnocarb, a New Central Nervous System Stimulant"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 1, 1973, pp 50-52

Abstract: The recently developed heterocyclic compound sydnocarb -- N-phenylcarbamoyl-3-( $\beta$ -phenylisopropyl) sydnonomine,  $C_{18}H_{18}N_4O_2$  -- produced marked motor excitation in mice, rats, dogs, and cats, increased the frequency and decreased the amplitude of electrical potentials, shortened the latent period of conditioned avoidance reflexes, and reduced the duration of the somnifacient action of hexobarbital. It did not depress monamine oxidase activity, affect arterial pressure, or cause morphological changes in the viscera or peripheral blood. Administered to persons with various neurological and mental diseases (average dose 10 to 25 mg) characterized by asthenic, adynamic, and apathic disorders, sydnocarb had a pronounced stimulatory effect (exceeding that of amphetamine) without inducing euphoria or motor excitement, tachycardia, elevated blood pressure, or other peripheral changes. No signs of physical or 1/2

USSR

KHOLODOV, L. Ye., Khimiko-Farmatsevticheskiy Zhurnal, No 1, 1973, pp 50-52

mental dependence were observed even in patients that received the drug more than 2 years. Sydnocarb has been authorized by the USSR Ministry of Health for use as a psychotropic agent.

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- 47 -

USSR

UDC 616.981.25-092.9

ANATOLIY, S. A., ANTONOVSKAYA, I. I., TASK, S. Ya., and PADERINA, Ye. M.,  
Institute of Experimental Medicine, Academy of Medical Sciences USSR,  
First Leningrad Medical Institute imeni Akad. I. P. Pavlov, and Leningrad  
Sanitary-Hygiene Medical Institute

"Comparison of Some Experimental Models of Staphylococcal Infection"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971,  
pp 60-63

**Abstract:** A comparison of four models of staphylococcal infection -- intraorbital, intravenous, intraperitoneal, and intranasal -- showed that mice inoculated in the first two modes died within 9 to 12 hours, while those inoculated in the last two modes died 3 to 5 days later. The rapid death and disappearance of Staphylococci in the animals inoculated intraperitoneally or intranasally indicate a toxic process, whereas the longer survival time of the animals inoculated intraorbitally or intravenously point to a true infectious process. The latter two models are, therefore, to be preferred when studying the virulence of Staphylococci, immunity to these microorganisms, and pathogenesis of generalized infection.

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USSR

UDC 539.216.1

TASKAYEV, I. P.**"Growth of Helicoid Filamentary Crystals"**

Moscow, Izvestiya Akademii nauk SSSR, Neorganicheskiye materialy, Vol 7,  
No 12, Dec 71, pp 2134-2136

**Abstract:** Criticism is expressed of the Amelinckx model (Phil. Mag. 3, 425, 1958) which is said to explain the formation of helicoid filamentary crystals by the rotary motion of the end point of the axial dislocation at the apex of the whisker. It is believed that whiskers growing from the solid phase may acquire a helicoid shape -- a phenomenon attributed to helicoid dislocations in the substrate material. All other factors, including internal stresses due to phase transformation or decomposition of supersaturated solutions may also become contributory to the growth of such whiskers. A model is proposed explaining the formation of helicoid filamentary crystals in terms of a vortex mechanism effected during growth by oscillations of the gas flow or the growing crystal. Noteworthy is the fact that helicoid coiling as a result of oscillations is more likely to occur when the shape's length-to-diameter ratio is increased. (1 illustration, 8 bibliographic references)

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- END -

CSO: 1842-W

- 98 -

1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--GROWTH OF CRYSTAL WHISKERS FROM A BASE -U-  
AUTHOR--TASKAYEV, I.P.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 577-9  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--WHISKER CRYSTAL, CRYSTAL GROWTH, COPPER COMPOUND, SILVER  
COMPOUND, CHLORIDE COMPOUND  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/0910 STEP NO--UR/0363/70/006/003/0577/0579  
CIRC ACCESSION NO--AP0118079  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118079

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GROWTH PROCESS OF WHISKERS FROM A BASE MATERIAL IS EXPLAINED. THE PREVIOUS EXPLANATION OF THE GROWTH PROCESS OF WHISKERS FROM A BASE (S. S. BRENNER, 1959) IS NOT ENTIRELY CORRECT NOR CAN THE MODEL OF WHISKER GROWTH AS DESCRIBED IN THAT WORK EXPLAIN THE FAST GROWTH OF WHISKERS FROM THE BASE. THE PRESENT WORK ELIMINATES SOME OF THE INCONSISTENCIES. FORMULAS ARE DERIVED TO REPRESENT THE WHISKER GROWTH FROM THE BASE AND ARE TESTED ON EXAMPLES OF CUCL AND AGCL, WITH SATISFACTORY RESULTS.

UNCLASSIFIED

TASOV, V.N.

Climatology

*Climatology Source: JPRS# 59515  
13 July '73*

(1)

## WHEAT AND BARLEY HARVEST VARIATIONS IN DIFFERENT ZONES CONSIDERED

(Article by V. N. Tasov, candidate of the geographical sciences, Institute of Experimental Geography: "Variations in Spring Wheat and Barley Harvests in the Country's Different Zones"; however, Zemnovode Klimogeografiya, No. 6, June 1973, pp 20-21)

An analysis of the variations in winter crop harvests has already pointed out the great effect of the precipitation pattern on this process (see the magazine Zemnovode Klimogeografiya, No. 1, 1973). For spring crops, spring and summer precipitation is of basic significance. For this includes the effect of an entire complex of fall and winter conditions that to a significant extent explain winter crop harvest variations.

Employed in this article as starting data for analyzing spring crop harvest variations in the USSR's basic agricultural regions is the Central Statistical Administration's information on average oblast productivity of spring wheat and barley in the 1955-70 period. In accordance with the accepted methods applied to overall harvest variations, we separated out that part which is connected with fluctuations of meteorological conditions by year and excluded the harvest variation which hinges on the level of agricultural standards.

A comparison of the extent of the climatic variation of harvests ( $C_n$ ) with total rainfall during the warm period of the year accords to the quite close connection among the indicators bearing on spring crops (the correlation coefficient for barley is  $r = 0.76$ , for wheat  $r = 0.78$ ).

Constructed in accordance with the extent of  $C_n$  were maps on the climatic variation in the productivity of spring barley and wheat. These maps show quite distinctly the particularities of each of these crops. The zone of the most stable harvests ( $C_n < 0.20$ ) is located in the west and north European USSR; moreover it is larger for barley than for wheat.

USSR

UDC 621.396.6-217(086.6)

SHIL'DKRET, S. M., TASSEV, V. D.

"A Chassis for Electronic Equipment"

USSR Author's Certificate No 255384, Filed 25 Jul 67, Published 31 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V416 P)

Translation: This Author's Certificate introduces a chassis for electronic equipment which contains support plates interconnected by hinges and tie braces. As a distinguishing feature of the patent, the rigidity of the construction is improved by inclining the tie braces to the plates on both sides, and beveling the braces at the ends so that they support each other when the chassis is opened.

1/1

USSR

UDC 612.8

MUSTAFIN, A. M. and TASYBAYEVA, G. A., Kazakh State University imeni  
S. M. Kirov

"An Acetylcholine Mediator in the Neuron-Glia System: Structural Changes in  
Schwann's Sheath in Nerve Fiber Activity Under Conditions of Choline  
Receptor Block"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Biologicheskaya,  
No 4, Jul/Aug 73, pp 73-75

Abstract: The influence of D-tubocurarine on structural changes in Schwann's sheath in isolated frog sciatic nerve fibers and bundles was investigated under conditions of long-term rhythmic activity, by means of photomicroscopy. Darkfield interference was used to study the myelin sheath. It was found that though D-tubocurarine did not affect electrical activity of the nerve the morphological changes in the sheath observed in controls were absent. This is said to indicate that blocking the choline receptors weakens the interaction between the axial cylinder and Schwann's sheath and that acetylcholine is a mediator of neuron-glia interrelationships in nerve conductors.

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USSR

UDC: 669.295.004.2

MOKINA, Ye. P., PLAKHINA, L. N., TASYBAYEVA, N. B.

"Use of Industrially Contaminated Waste Water in Recycle Water Supply of the Ust'-Kamenogorsk Titanium-Magnesium Combine"

Tr. N.-I. i Proyekt. In-t po Obogashch. Rud. Tsvet. Met. "Kazmekhanobr" [Works of "Kazmekhanobr" Scientific Research and Planning Institute for Dressing of Nonferrous Metal Ores], 1972, Collection 9, pp 150-154 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G216, by the authors).

Translation: Conditions of formation of the industrial wastes of a combine are studied. A plan is suggested for utilization of waste waters in a recycled water supply. The plan calls for two versions of recycling of water: a) with purification of all waste waters in existing purification structures; b) recycling of water with utilization of valuable components and complete purification of waste waters in additional equipment. It is suggested that measures be taken to prevent possible accumulation of salts in the recycled water supply system. 2 figures.

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USSR

SOLYAKOV, S. P., BELKIN, G. I., TATAKIN, A. N., NACHAYEV, V. M., ZOBININ, S. I.,  
ZYEV, N. M., IVANOV, A. B., VUKOLOV, V. V., SVALOV, G. N., DEVYATKIN, V. N.,  
ALEKSANDROV, V. A., GRIBOV, V. I.

"Method of Processing Slimes from Electrolytic Production of Magnesium"

Author's Certificate No 278126, filed 11/02/69, published 18/11/70. (Translated  
from Referativnyy Zhurnal Metallurgiya, No 2, 1972, Abstract No 2G185).

Translation: In order to use the slime for production of Mg, it is fed from the electrolyzers to chlorinators together with the depleted  $MgCl_2$  electrolyte in the form of a pulp containing 1-10%  $MgO$  and 5-25%  $MgCl_2$ . The chlorinators also receive the Cl-Mg raw material and  $Cl_2$ , after which the electrolyte, enriched with  $MgCl_2$ , is fed to the electrolyzers.

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USSR

UDC 669.721.472

STRELETS, Kh. L., DEVYATKIN, V. N., TATAKIN, A. N., CHESNOKOV, A. S., CHISTYAKOVA, V. S., MEDVETSKAYA, G. A., BONDARENKO, N. V.

"Development of Designs of Diaphragmless Magnesium Electrolyzers"

Tr. Vses. N-i. i Proyektn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 41-47. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G195 by the authors).

Translation: Results are presented from testing of pilot-scale diaphragmless electrolyzers (DE) with upper and lower input of anodes. The DE allow the specific consumption of electric power to be decreased by about 1500 kw·hr/t Mg, increasing the specific removal of Mg by 30-35% and decreasing the losses of Cl in the exhaust gases. The results of testing indicated that DE with lower position of the anodes should be introduced at two plants. 2 figs; 2 tables, 6 biblio refs.

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USSR

UDC 669.721.472(086.8)

REZNIKOV, I. L., ZUYEV, N. M., IVANOV, A. B., POLYAKOV, YU. A., FRANTAS'YEV, N. A., TATAKIN, A. N., SOLYAKOV, S. P., and KAPAVAYNYY, A. I., All-Union Scientific Research and Design Institute of Aluminum, Magnesium, and Electrode Industry, Solikanskiy Magnesium Plant

"Method of Preparing Refined Electrolyte for Magnesium Production"

USSR Author's Certificate No 259401, filed 4 Sep 68, published 15 May 70  
(from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G134 P)

Translation: A method is proposed for preparing a refined electrolyte for magnesium production, which includes enrichment of a reversible electrolyte with chlormagnesium initial raw material and refining by means of electrolytic and heat treatment, and also with the help of reducing agents and gases. To increase the degree of refining of the electrolyte and improve the technological indicators, the reversible electrolyte is separated into several streams, one of which is fed to the beneficiation with chlor-magnesium raw material, and the remaining ones are added to the obtained chloride melt enriched with  $MgCl_2$  after refining. The enrichment of reversible electrolyte with chlormagnesium raw material produces 25-50% concentration of  $MgCl_2$  at melt temperatures of 450-650°. The concentration of  $MgCl_2$  in the refined electrolyte is maintained at 10-25%. 1/1

1/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--FORMATION OF DROPS OF MAGNESIUM IN THE ELECTROLYSIS OF CHLORIDE  
MELTS -U-

AUTHOR--(03)--ORLOV, A.M., POLYAKOV, P.V., TATAKIN, A.N.

CCOUNTRY OF INFO--USSR

SOURCE--IZVEST. V.U.Z., TSVETNAYA MET., 1970, (1), 39-42

DATE PUBLISHED----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--MOLTEN CHLORIDE, ELECTROLYSIS, MAGNESIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1552

STEP NO--UR/0149/70/000/001/0039/0042

CIRC ACCESSION NO--AP0125178

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--APO125178

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM GOVERNING THE FORMATION OF MG DROPS IN THE ELECTROLYSIS OF CHLORIDE (NACL PLUS KCL PLUS MGCL SUB2) MELTS WITH ELECTRODES OF VARIOUS COMPOSITIONS (C STEEL, CAST IRON, ETC.) WAS STUDIED. THE GRAPHITE CONTAINED IN THE ELECTRODE MATERIALS ACTED AS STABILIZER FOR THE DROPS OF MG ON THE ELECTRODE AND IN THE ASSOCIATED MG EMULSION. THE RELATION BETWEEN THE NUMBER OF DROPS AND THE C.D. WAS IN GENERAL OF A VERY COMPLEX CHARACTER, APPARENTLY AS A RESULT OF THE COALESCENCE OF DROPS ON THE CATHODE.

UNCLASSIFIED

UDC 532.612.4

USSR

TATAROVENKO, V. A., KORCHUNOV, B. N."Effect of an Oxide Film on Capillary Phenomena"Moscow, Izvestiya Akademii Nauk SSSR: Ser. Fizicheskaya, Vol 37, No 11,  
Nov 73, pp 2295-2296

Abstract: Experience in making aluminum articles directly from the melt by the Stepanov method has shown that crystallization of thin-walled stock in vacuum is much more complex than in air. Thin filaments are readily produced in air with a rounding radius on the edges of about 0.1 mm. When filaments of this kind are produced in vacuum, special borders must be used with a rounding radius of about 2 mm. In this paper the authors attempt to explain the reasons for this effect. Since the difference between air and vacuum production of aluminum articles is the dense oxide film on the aluminum melt in air, experiments were done using the Neumann method to determine the influence of this film on capillary phenomena responsible for the formation of the liquid column. The coefficient of surface tension was measured by determining the force required to pull a wetted disc free from the melt surface. It was found that the effective capillary

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USSR

TATARCHENKO, V. A., KORCHUNOV, B. N., Izvestiya Akademii Nauk SSSR: Ser. Fizicheskaya, Vol 37, No 11, Nov 73, pp 2295-2296

constant for aluminum covered by an oxide film increases with increasing curvature of the articles being pulled from the surface. From this stand-point the presence of a film is desirable since it compensates for the effect caused by the reduction in the height to which the liquid column is raised as its curvature increases. Intentional creation of a film with properties of this kind on the surface of the melt is one of the methods of controlling capillary phenomena when making aluminum articles directly from the melt. The theory of capillary effects is applicable to aluminum covered by a film when an effective capillary constant is introduced which depends on the diameter of the liquid column.

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USSR

UDC 548.55

KOSTYGOV, A. S., TATARCIENKO, V. A., STEPANOV, A. V., Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences USSR

"Convective Cooling of Samples Obtained From a Melt by the Stepanov Method"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 3, 1972,  
pp 481-485

**Abstract:** Convective cooling of aluminum parts of various shapes and sizes obtained from a melt by the Stepanov method is discussed. Cooling parameters on a model applicable to conditions close to crystallization are calculated. Stepanov described the cooling of a crystal seed by a current of cold gas and pointed out the possibility of the formation of new seeds, upon cooling of the melt, which aid in the formation of a polycrystalline structure. Single crystals of aluminum bronze were obtained with the aid of forced convective cooling at rates in order of magnitude higher than in growing single crystals by traditional methods. The requirements imposed on the cooler were to provide a given pulling rate and to distribute the cooled gas over the perimeter of the contour of a transverse cross section of the sample on which the desired form of the crystallization front is achieved. Profiles of complex form are thus obtained. The design of two types of cooler, slit and jet, is described.

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USSR

KOSTYGOV, A. S., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya,  
No 3, 1972, pp 481-485

Expressions are derived for the drawing rate of the sample and the gas flow per  
unit weight of the sample.

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TATARCHUK, P

Central  
Statistical  
Admin.  
MSSR

## PRINCIPLES FOR REVALUATION OF FIXED CAPITAL DISCUSSED

Article by P. Tatarchuk, Chair of the Central Statistical Administration  
Under Chairman of Ministers Naidarjan SSB: "A Matter of State Importance -  
Revaluation of the Fixed Capital of Institutions and Organizations of the  
Republic", Vilnius, Sovetskoye Izdatelstvo, 5 March 1972, p. 27

Revaluation of fixed capital in the enterprises, organizations, and institutions under state account was carried out on 1 January 1972 and is now in its final stage -- acquisition, checking, and review have begun on the regions dealing with the results of the revaluation and determination of fixed capital depreciation.

At the same time the Republic is working on preparations for a revaluation of the fixed capital of the institutions and organizations which operate under the State Budget. The republic ministries and departments and the appellations of the city and rayon courts of workers' deputies are required to make preparation for it in institution and representation assessment of the fixed capital base on the balance sheets of the institutions and organizations. This is to be done between 1 July and 31 December 1972 and is to be reported and checked January 1973.

The peculiar feature of the forthcoming revaluation of fixed capital is that it is being carried out first in the institutions under the budget. This category of institutions and organizations lacks a sufficient number of specialists to perform this work. Because of this, the institutions of the rayon and city Soviets of Workers' Deputies have been authorized to recruit some enterprises and organizations of the rayon various specialists who will serve the rayon institutions. They will do this for a period of 2 months and they will retain the wage for their regular place of work.

The following basic measures will need to be carried out during the preparatory period. First of all, all the ministries and departments, the institutions of the local Soviets of Workers' Deputies, and the budget institutions and organizations must set up committees for revaluation of fixed capital and determination of its depreciation and they must draw up organization

12/25 55663 44-357 6/20 7, 72-

USSR

UDC 621.793.6

KAYDASH, N. G., CHASTOKOLENKO, P. P., TKACHENKO, P. A., TITARCHUK, V. S.,  
LUCHKO, M. V., LUTSENKO, L. I., Uman Pedagogical Institute

"Diffusion Titanation of Type 45 Steel"

Moscow, Zashchita Metallov, No 4, 1972, pp 508-509

**Abstract:** One promising method for increasing the heat resistance of steels is diffusion saturation of their surface with metals, particularly titanium. The authors studied the structure, composition, and certain properties of diffusion layers formed on type 45 steel upon saturation of the surface with titanium. This process forms dense coatings, firmly bonded to the base metal. Metallographic analysis has shown that the titanium coatings have a columnar structure. Their microhardness on the surface of the specimen is 330 kg/mm<sup>2</sup>, decreasing linearly to 206 kg/mm<sup>2</sup> at 340  $\mu$  from the surface due to decreasing titanium concentration. The titanium coatings on type 45 steel consist of a phase with a body-centered cubic lattice with parameters  $a=2.8991 \text{ \AA}$  on the surface of the specimen. The  $a=2.8768 \text{ \AA}$  line of iron was also discovered in the same zone. At 900°C and less, the titanium-treated steel had heat resistance equal to type 1KH18N9T chrome-nickel steel, but was oxidized more strongly at 980°C.

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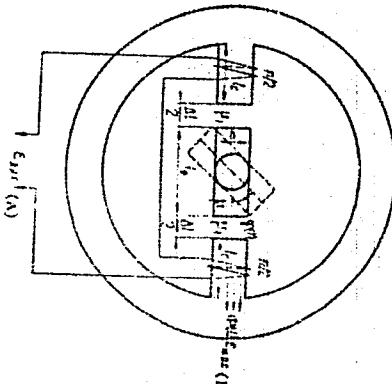
TATARENKO, G. M.

## SOME ELECTRIC PROPERTIES OF A TURBOMAGNETIC VELOCITY SENSOR

[Article by B. G. Kaduk, N. V. Veretka and G. M. Tatarenko, Kiev, Ukraine, No 5, 1971, Izd-vo "Naukova Dumka", Kiev, pp. 173-175]

JPRS 559 F2  
15 May 72

Insignificant size, lack of a need for current sources and additional amplifiers, high linearity of conversion, simplicity and reliability are the principal requirements imposed on a turbomagnetic velocity sensor with an axial vane when registering the velocity of movement of objects in a fluid, especially some hydrodynamic objects.



Computers: Applications & Programming

USSR

UDC: 681.3.06:51

LINKIN, G. A., PETROVA, L. I., and TATARENKO, V. N.

"Methods of Analytic Description of Discretely Specified Plane  
Outlines of Complex-Shaped Parts"

Kiev, V sb. Chislovoye programmnoye upr. tekhnol. oborud. (Numerical Programmed Control of Technological Tools--collection of works) "Tykhnika," 1973, pp 8-13 (from RZh--Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1973, Abstract No 12B167)

Translation: A classification is considered for the most widely used methods of solving problems in the analytic description of discretely specified outlines which is general for geometric interpretations and degree of accuracy in satisfying conditions at specified points. The methods and procedures for solving problems of discretely specified contours involve the replacement of the contours by analytic curves determined by the form of the connection between the substituted curve and the discrete points, with possible additional conditions depending on the geometrical interpretation of the problem's solution. Three illustrations, bibliography of 10. Resume.

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USSR

UDC 621.382.2/3

KONTSEVOY, YU. A., KOLTUN, M. M. and TATARENKOV, A. I.

"Polishing Quality Control Instrument for Semiconductor Plates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 67, Author Certificate No 258463 Class 21g.

Abstract: This author certificate introduces an instrument for quality control of semiconductor plate polishing. The instrument consists of light source, a device for light focusing and modulation, a diaphragm and means for photosignal recording. To increase sensitivity, the instrument is provided with a means of multiple ultra-violet-light reflection, consisting of a set of mirror polish plates of the same material as the material to be tested, and a selective photocamera, whose maximum spectral sensitivity coincides with the spectral interval of the reflection peak of the tested semiconductor material.

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Acc. Nr.: RA0040535Ref. Code: UR0482

USSR

JPRS Sa248  
UDC 621.382.2/3KONTSEVOY, YU. A., KOLTUN, M. M. and TATARENKOV, A. I."Polishing Quality Control Instrument for Semiconductor Plates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 67, Author Certificate No 258463 Class 21g.

**Abstract:** This author certificate introduces an instrument for quality control of semiconductor plate polishing. The instrument consists of light source, a device for light focusing and modulation, a diaphragm and means for photosignal recording. To increase sensitivity, the instrument is provided with a means of multiple ultra-violet-light reflection, consisting of a set of mirror polish plates of the same material as the material to be tested, and a selective photocamera, whose maximum spectral sensitivity coincides with the spectral interval of the reflection peak of the tested semiconductor material.

Reel/Frame  
15750018

USSR

UDC: 621.375.82

MOROZOV, B. N., TATARENKOV, V. M., USPENSKIY, A. V.

"Using the Saturation Effect for Stabilization and Absolute Measurement of Laser Power"

Metrologiya, 1973, No 3, pp 38-45 (from RZh-Fizika, No 8, Aug 73, abstract  
No 8D1131 by the authors)

Translation: It is shown that the dependence of spectral characteristics of a medium on the power of transmitted laser emission can be used for stabilization and absolute measurement of laser power. Specific circuits are considered, and the accuracy of the method and range of the measurements are evaluated.

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USSR

UDC 536.628

GERASHCHENKO, O. A., KARPENKO, V. G., TATARINOV, E. A.

"Adiabatic Calorimeter for Contact Calibration of Thermal Flow Gauges"

Teplofiz. i teplotekhnika. Resp. mezhved. sb. (Thermal Physics and Power Engineering -- republic interdepartmental collection of works), 1970, Vol 16, pp 83-86 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 8, Aug 70, Abstract No 8.32.644)

Translation: The peculiarities of calibration of thermal flow gauges by the radiation and contact methods are considered. The design and principal of operation of the low-inertia adiabatic calorimeter with automatic compensation of heat losses developed by the Institute TTF of the Ukrainian Academy of Sciences is described. As the source of zero-indicator which controls absence of heat escape from the low-inertia adiabatic calorimeter is used a high-sensitivity thermoelectric battery with  $n \geq 3 \cdot 10^3$  number of microelements due to which the thermal losses of the low-inertia adiabatic calorimeter do not exceed  $\pm 0.1\text{-}0.2\%$ . The low-inertia adiabatic calorimeter is designed for contact calibration of thermal flow gauges. 3 ill., 2 bibli. entries.

1/1

Resume

- 115 -

1/2 029  
TITLE--UNCLASSIFIED PROCESSING DATE--04DEC70  
MEASUREMENT OF THE CROSS SECTION FOR SECOND ORDER IMPACT OF AN  
EXCITED MERCURY ATOM WITH A CESIUM ATOM, HG-6 PRIMES P SUB1 PLUS CS  
AUTHOR--(03)-BRODSKIY, V.B., VORONCHEV, A.T., TATARINOV, M.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. TEKH. FIZ. 1970, 40(5), 1116-19

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEAR CROSS SECTION, NUCLEAR REACTION, NUCLEAR COLLISION,  
EXCITED STATE, MERCURY, CESIUM, PHOTOIONIZATION, ELECTRON EMISSION

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DOCUMENT CLASS--UNCLASSIFIED

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CIRC ACCESSION NO--AP0138943

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138943

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CROSS SECTION OF THE TITLE REACTION WAS DED. AS (6 PLUS OR MINUS 2) TIMES 10 PRIME NEGATIVE 14 CM PRIME NEGATIVE 2 FROM EXPTL. DATA ON THE RATIO OF THE CROSS SECTION OF THE 2ND ORDER COLLISION OF AN EXCITED HG ATOM WITH A CS ATOM TO THE CROSS SECTION OF THE POLARIZATION OF CS ATOM BY THE HG RESONANCE LINE (2537 ANGSTROM). THE RATIO OF THE CROSS SECTIONS WAS DED. FROM EXPTL. DATA ON THE RATIO OF ELECTRON GENERATED DURING THE 2ND ORDER COLLISION AND THOSE GENERATED BY PHOTOIONIZATION. THE CONCN. OF THE EXCITED HG ATOMS WAS DED. FROM THE ABSORPTION OF THE 2537 ANGSTROM LINE IN HG VAPOR. THE EXPTL. DED. CROSS SECTION EXCEEDS BY SIMILAR TO 20 TIMES THE CALCD. DATA (K. J. KATSUURA, 1965; B. SMIRNOV, AND O. FIRSOV, 1965).

UNCLASSIFIED